

## **Sustainable Strategies for Monitoring, Assessment and Management of Persistent Organic Pesticides**

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### **ABSTRACT**

Of the twelve Stockholm Convention Persistent Organic Pollutants (POPs), nine are organochlorine pesticides: aldrin, toxaphene, DDT, chlordane, dieldrin, endrin, HCB, heptachlor and mirex. These pesticides have been extensively used worldwide after World War II for crop protection and disease vector control, with considerable success. However, the negative impact of these pesticides on agro-ecosystems, as well as on the environment and human health have become increasingly evident since the 1950s. This is due to the fact that these pesticides are extremely stable and persist in the environment, bioaccumulate in organisms and food chains, are toxic to humans and have chronic effects such as disruption of reproductive, immune and endocrine systems, as well as being carcinogenic, and are transported in the environment over long distances to places far from the points of release.

This paper attempts to review the historical background and current status of POP pesticides use in China (including Hong Kong). Monitoring, assessment and management programs of POP pesticides will also be examined, citing examples of our recent studies on contamination of POPs in different species of cultured fish (collected from various fish ponds in the Pearl River Delta) and human body loadings (pesticide concentrations in milk samples). These programs are crucial steps for the effectiveness evaluation of the Stockholm Convention POPs, and also for formulating new legislations and validating existing legislations on POP pesticide use. Legislations should be fully enforced for prohibiting illegal usage of POP pesticides. More sustainable alternative strategies for the reduction and elimination of POP pesticides are also needed. Integrated Pest Management (IPM) and Integrated Vector Management (IVM) should be adopted for crop protection and disease vector control. Implementation of all these strategies should be promoted through regional cooperation, in addition to development and implementation of national action plans.